

## WHAT IS CLAIMED IS:

1. A process for producing a golf ball comprising:
  - a first step wherein a half shell is formed comprising a thermoplastic resin composition, having a bowl-like shape, and having the thickness of the top part less than the thickness of the side part;
  - a second step wherein two pieces of said half shell and a core covered by said half shells are placed into a mold comprising an upper portion and a lower portion both of which having a semi hemispherical cavity, in a state of said mold opened;
  - a third step wherein said mold is clamped; and
  - a fourth step wherein a thermoplastic resin composition is compressed while being heated in the spherical cavity formed by the clamping, resulting in outflow of the excess thermoplastic resin composition from the spherical cavity, to form a cover having the nominal thickness of 0.3 mm or greater and 1.0 mm or less with remained thermoplastic resin composition.
2. The process for producing a golf ball according to claim 1 wherein the difference ( $T_s - T_t$ ) between the thickness  $T_s$  of the side part and the thickness  $T_t$  of the top part of the half shell formed in said first step is 0.02 mm or greater and 0.30 mm or less.
3. The process for producing a golf ball according to claim 1 wherein the volume of the thermoplastic resin composition of the two half shells placed into said second step is set to be 105% or greater and 120% or less of the volume of the cover.

4. The process for producing a golf ball according to claim 1 wherein said fourth step comprises a low pressurizing step in which the thermoplastic resin composition is compressed at a pressure of 5 kgf/cm<sup>2</sup> or greater and 75 kgf/cm<sup>2</sup> or less, and a high pressurizing step in which the thermoplastic resin composition is compressed at a pressure of 100 kgf/cm<sup>2</sup> or greater and 250 kgf/cm<sup>2</sup> or less.